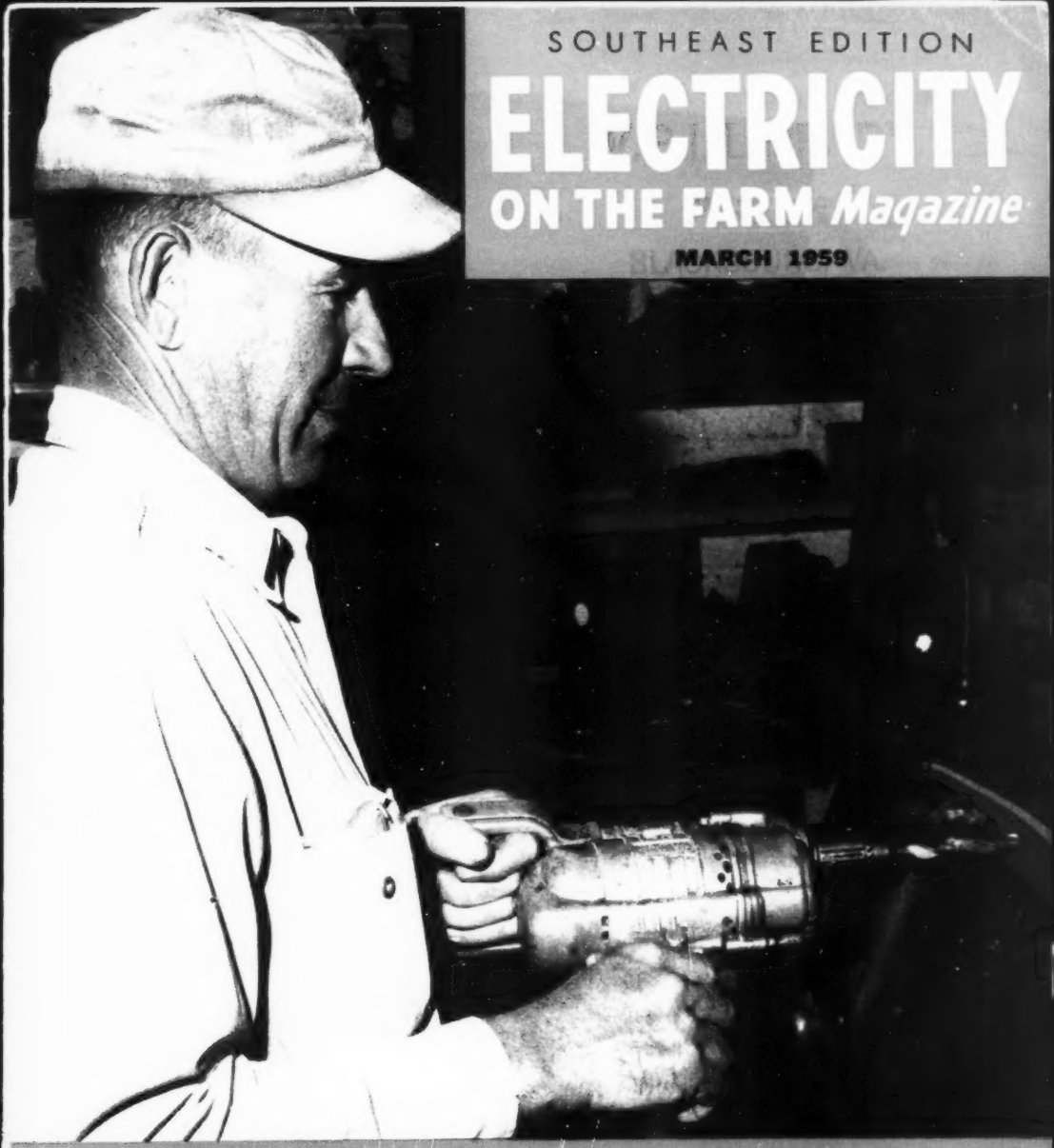
SOUTHEAST EDITION

ELECTRICITY ON THE FARM *Magazine*

MARCH 1959



MAINTENANCE AND SERVICING pay off with farm machinery. See how another farmer pares costs way down with his well-equipped farm shop—page 7.

Poultry House Mechanization . . . . . PAGE 11

Home Section: Refrigerators Are New! . . . . . PAGE 19

Fluorescents Give More Light at Less Cost . . . . PAGE 28

3 Rules For Buying Water Systems

1 Be sure the water system you buy is from a reliable maker with a reputation for quality, that you will be able to get replacement parts in the years to come...Fairbanks-Morse has manufactured quality products for 128 years.

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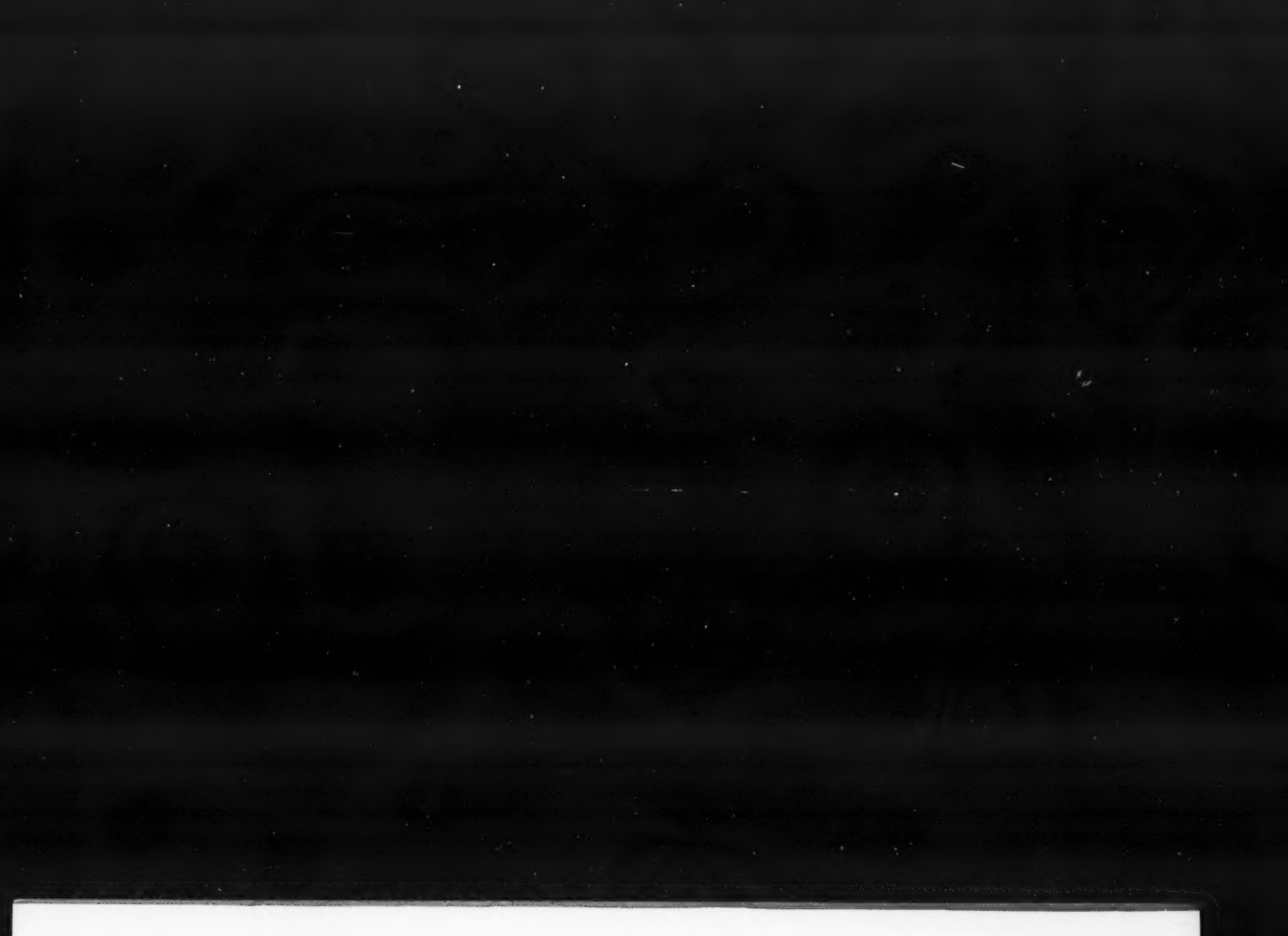

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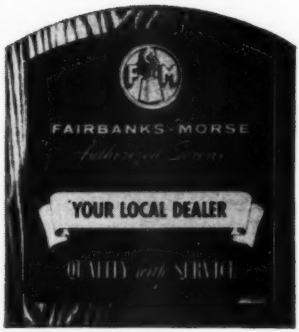

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SOME LIGHT ON LIGHTNING

Lightning causes a very large proportion of farm fires. Better than 99% of this damage by lightning could be prevented by properly installed and maintained lightning rods. If you now have rods make sure they are properly installed, adequate for the job, and in good condition. Pay special attention to grounds because they have a habit of becoming broken or loose.

If you do not now have lightning rods on your principal buildings, better get some and be on the safe side of the next thunder storm.

A DIFFERENT HITLER

While traveling in Virginia, we stopped at a farm which was particularly well kept. Shortly, our host spoke of Hitler. In this case, Hitler turned out to be a tractor, a 1928 model that is in its 31st year of use and still giving good service.

We never thought to ask why the name Hitler. But it is interesting to guess. The tractor made its appearance on the farm about the same time that the late European leader's name was first heard in this country. Or a more logical guess may be that the name was bestowed because of the crops the trusty tractor helped deliver during the war years when new equipment was hard to come by. In any event, the machine has far outlived the man whose name it bears.

What we did find out is that the long life of Hitler and other equipment on this farm is attributed to regular maintenance and repair given it in the farm shop. With convenient electric service, more farmers are setting up their own shops and reaping the harvest of longer equipment life.

LIKE AN OLD HIGHWAY

A pretty penny is being spent these days to widen old highways and replace bridges that were constructed for the Model-T and the likes of it. Today's autos are wider and longer, faster and more plentiful. Roads and bridges that were plenty good for the Model-T just are not big enough to meet 1959 traffic demands.

All of which reminds us that many farm wiring systems date back quite a few years, too. These are the highways along which electricity travels to operate the lights, motors and appliances that have brought so many changes for better farm living. Most of us now have more electric appliances in the home, more work-saving electric motors around the farm than we dared to dream about when our farmsteads were wired. So there is a good chance our wiring system is like the old highways—inadequate for 1959 demands and requirements.

Why not give your wiring system a checkup. Overloading makes it less efficient and creates hazards, one of which is that motor life will be shortened. You may find it will pay you to remodel. And if you do, don't forget to allow extra capacity for your future electrical growth!

Hugh Hansen

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SOUTHEAST EDITION

ELECTRICITY ON THE FARM *Magazine*

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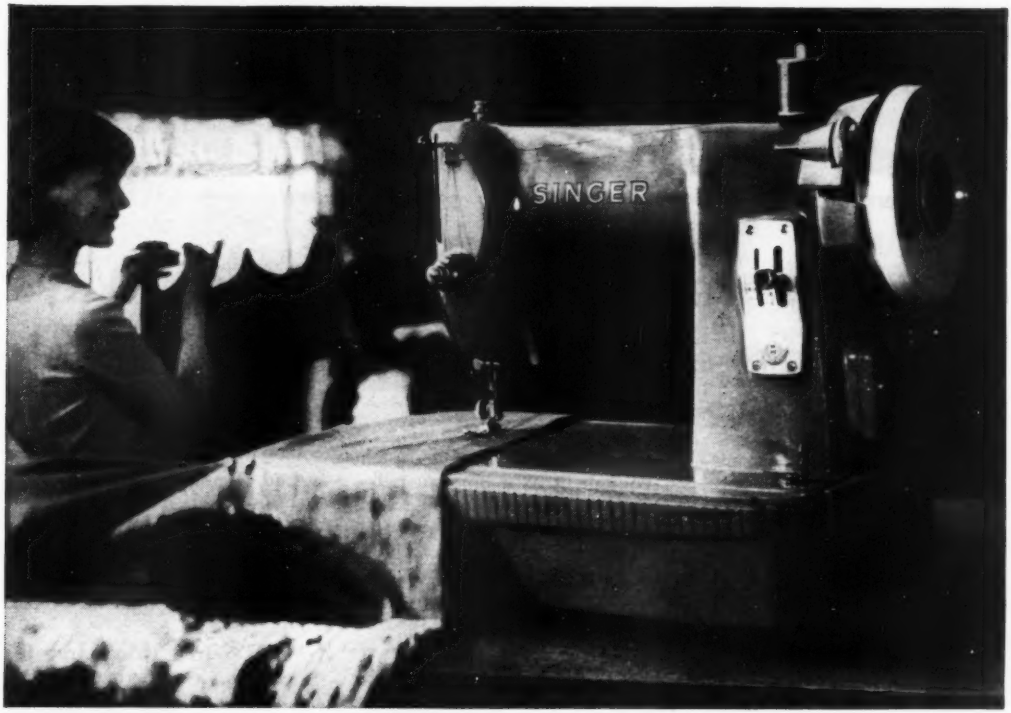
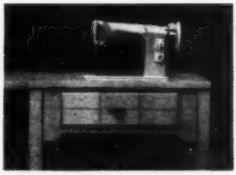


Versatile . . . easy to use, too. You can whip up things for the family and your home right away.



Variety of cabinets for the Young-Budget SINGER. Blond or walnut finish. Attractively priced, too.

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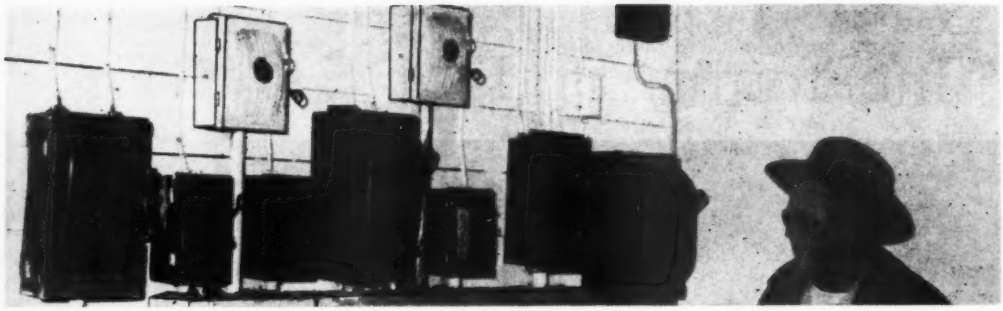


Nerve center of Rushin Dairy's electrical system is this switch panel. Each motor in dairy has a time-delay-fused switch.

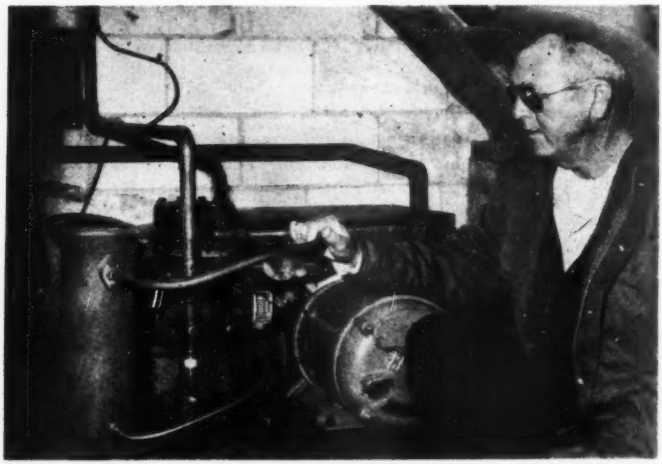
Wiring Foresight Pays In Many Ways

"Plan for Expansion" should be farm wiring motto

Frank Rushin was looking ahead when he built his new dairy barn eight years ago. Instead of saving a few pennies then by installing 60-ampere electric service and skimpy wiring, he saved future dollars by putting in 100-ampere service with adequate wiring.

Since then, the Ellerslie, Georgia farmer has added such equipment as a pipeline milking system and 1500-gallon bulk milk tank. His wiring has taken it all in stride. Other features of Rushin's dairy include:

1) A 100-ampere service entrance disconnect switch to turn off all electricity in an emergency.



Insurance feature of Rushin's dairy is use of two compressors to cool 1500-gallon bulk milk tank. If either of compressors develops trouble, the other one will hold the tank's temperature low enough to avoid loss or contamination of milk.

2) A separate switch box and circuit for each motor.

3) A panel for lighting circuits. In the milking area, there are three rows of lights, each with its own switch. Thus, he can light all or part of the barn.

4) Wire sizes are big enough, considering distance and load.

5) Time-delay fuses are used for all motor circuits. Rushin multiplied the motor's ampere rating by 1.25 to get time-delay fuse size. For example, for an 8-ampere motor he uses a 10-ampere fuse. Time-delay fuses are good for motor circuits because they permit the initial surge of power needed for starting, and then protect the motor and wiring.

6) One of the most helpless feelings around a dairy, he declares, is to be without water. When his deep-well pump had to be repaired, he bought another to use in the meantime. Now he has the two 1 hp pumps installed so that he can change over from one to the other in less than a minute. □□

Well-kept buildings and 30-year-old tractor still in use are no accidents. They are fruits of a maintenance and repair program built around the farm shop.

Still running 1928 tractors . . .

Top Equipment Maintenance Means Top Farm Shop

One of the best ways to reduce farm costs is to give equipment the care that will insure long, economical life. On the W. J. Morris and Sons farm at Amelia, Virginia, there is plenty of evidence of how a good repair program pays.

For example, the Morrises have bought 16 tractors since 1928. Fourteen, including two 1928 models, still are in use on the farm. Similarly, each of their four farm trucks has over 100,000 miles of service.

Penny Saved—Penny Earned

By extending the life of their machinery, the Morrises keep new equipment purchases to a minimum. Their thinking might be summed up in the old adage that a penny saved is a penny earned.

To the Virginians, the farm shop is essential to their success. "If we had to depend on hiring our repair work done, I don't see how we could stay in business," Garland Morris declares. "Our shop means so much in dollars and convenience . . . that I don't see how anybody gets along without one."

Shop Saves Time

He says the cost of off-farm repairs is only half the problem. The other factor is time. "If we break a disk we normally fix it and get back to the field within two hours. If we had to take it to a commercial shop we'd lose a day." The doorway to the shop is large enough that a 12-foot self-propelled combine can be moved through it. Thus, when mounted equipment breaks, it is brought inside and repaired without being taken off.

For smoothing welds, Garland uses an all-purpose grinder driven by a ¾ hp electric motor. Another ¾ hp motor drives a special grinder for sharpening mower blades. Greasing, cleaning, woodworking and painting are all done in the Morrises' shop—their key to farming success. □ □

Above: Air compressor is used by Garland Morris for inflating tires, cleaning equipment and spray painting.

Right: Plow point's life is lengthened by use of arc welder from one to five days. Picture shows how three-inch section of old point is welded to worn point.

There's Nothing Fishy About "Herringbone" Milking

New system allows one man to milk a cow a minute

By ALBERT MORRIS, JR.

From New Zealand comes an idea that brings greater efficiency to the dairy. It makes milking faster and easier. The idea: a system for handling cows in groups that lets one man use up to six milking units efficiently and milk a cow a minute. It utilizes mechanical feeding and pipeline milking.

One of the first Alabama farmers to change over to this "herringbone" system is Wilbur Tinsley of Trussville. He has a one-man dairy that consists of a double row of five stalls with five milker units. The operator works in a narrow pit between the rows of stalls, does not have to stoop to clean udders or attach milkers.

Cows Adjust Quickly

Tinsley says his cows quickly adjusted to the herringbone system. Cows enter and leave the barn in groups of five, enough to fill one side. They stand at a 30-degree angle from the operator's pit so that their udders are only three feet apart.

There is no wasted space. The cows have enough room for comfort, yet have no gates between them. They stand close enough together so that it is impossible for them to turn around in their stalls.

Pull Cord—Feed Cows

This angle parking of the cows is just one of the step-saving, time-saving features of the herringbone system. The operator waits at the end of the pit as the cows enter. As soon as he sees what position a cow is taking, he pulls a cord and issues a measured amount of feed. When the five cows are in place, he closes the gate to keep them there.

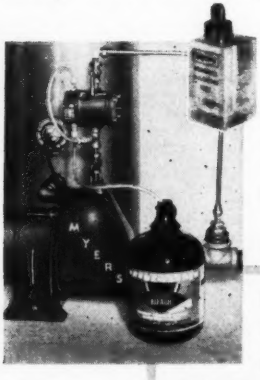
His next step is to wash the udders, milk a squirt from each quarter, and attach the milkers. While the cows on one side are being milked, he prepares the group on the other side and simply swings the milker units across the narrow pit. Pipelines run above the pit. Fluorescent lights run the length of the milking area.

Feed Handled Mechanically

Feeding is entirely mechanical. When the operator pulls the cord at the pit, it turns a short auger at the bottom of a downspout and feed is issued. The downspout is refilled from the horizontal feeder that extends down one side of the dairy, across the end and back up the other side.

Each straight section of the

NOW... *a low cost dependable way to get safe drinking water*



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Also solves red water and corrosion problems when used with polyphosphate material.

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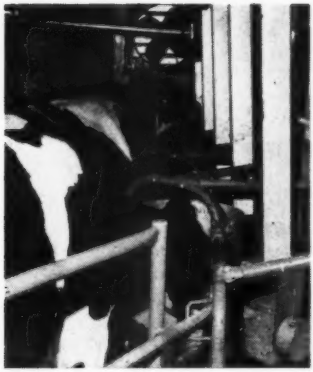
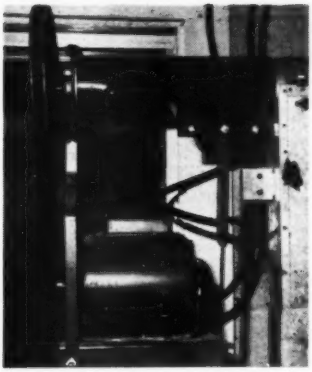


Feeder downspouts are filled by horizontal feeder attached to barn sides.



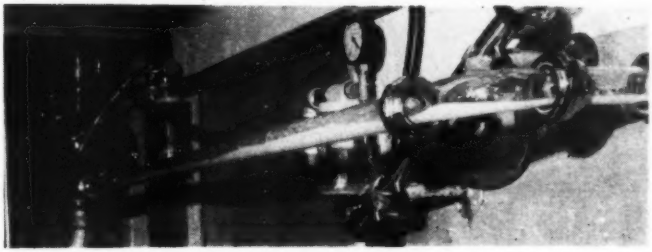
Three electric motors, microswitch-controlled (arrow, right), power feeders.

Udders are only three feet apart as cows stand at 30-degree angle from pit.

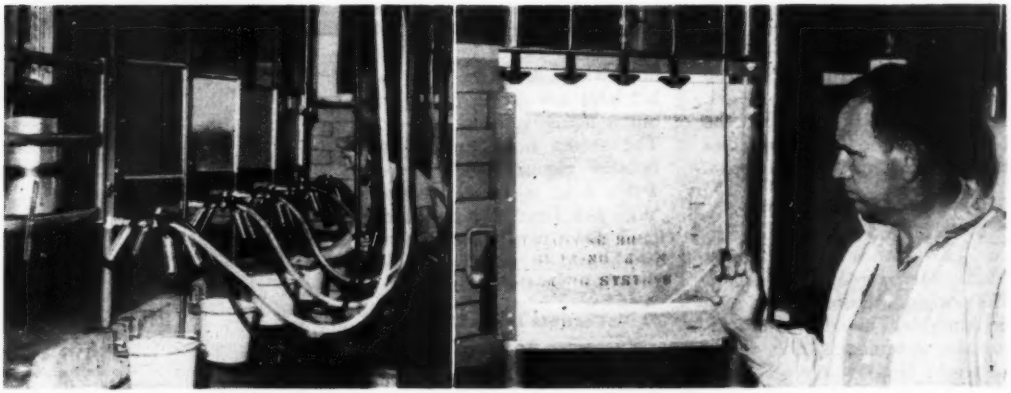
horizontal feeder has an electric motor, making a total of three. These motors are controlled by a microswitch that turns them on when feed is issued from the downspouts and turns them off as soon as the downspouts are refilled.

Tinsley has cut the milking time of his 50 Holsteins from 4½ hours to two hours. "I am sure we can handle 80 or 90 cows in much less time and with less effort than when we milked 40 before," he says, ". . . and do it with just one man in the dairy."

The herringbone system is ideal for larger dairies. But smaller operators also are taking advantage of its good features. Common practice is to install a single row of stalls using the same type equipment and retain the pit feature that eliminates stooping. With fewer stalls and milker units, it isn't as fast, but the ease-of-milking is still there. □ □



Milk rushes through sanitary glass pipeline. Bacteria count is low, quality high.



Left: Pit allows operator of herringbone milking system to work with cows in five stalls on either side of him without stooping. Milker units, hanging from center of pit, are swung from side to side as cows move in and out. **Right:** Pull of cord automatically issues correct amount of feed to cow. This is done as cows enter and take their places.

Hog pens are washed twice a day as part of sanitation program. Water under 60 pounds pressure washes wastes to back of pen and into disposal system.

Mudholes out-of-date as Model-T . . .

Hog-wash Is Easy With Water Under Pressure

The state of Mississippi has seen its hog production fluctuate from 1,373,000 in 1920 to 480,000 in 1930; from 825,000 in 1950 to 590,000 in 1954. Frank Simpson believes that the basic reason for this is mudholes that harbor germs and parasites.

Hogs Spend Lives On Concrete

With Robert Willis as his partner, he operates a hog farm at Flora that is free of mudholes. His porkers are born and grown on concrete. They drink from automatic waterers, getting plenty of fresh, clean water whenever they want it.

In the matter of sanitation, Simpson and Willis go much further. They wash their finishing and holding pens daily. This may sound like a big job on a farm where 3,000 to 4,000 market hogs are grown every year, but it actually takes little time. The secret is a 2 hp electric booster pump which delivers water under 60 pounds pressure. With this force it is possible to hose down pens without getting inside and to get the job done three to four times faster.

Concrete Floors Sloped

Concrete floors of the pens are sloped so that waste drains to the back and is washed into a sewage disposal system.

The Mississippi farmers have a three-stage production plan. Sows are kept in the 26-unit farrowing house until pigs are two weeks old. Infrared lamps are used for brooding and the house is cooled in summer by two 54-inch fans driven by ½ horsepower electric motors. Sows are taken from the farrowing pens twice a day for exercise.

Spray Cools Sows

In the second stage, sows and litters are moved from the farrowing house to holding pens and kept together until pigs are weaned. Then the pigs go to finishing pens. A spray over each pen emits a fine mist for cooling in summer. Four fans blow air through the pen area.

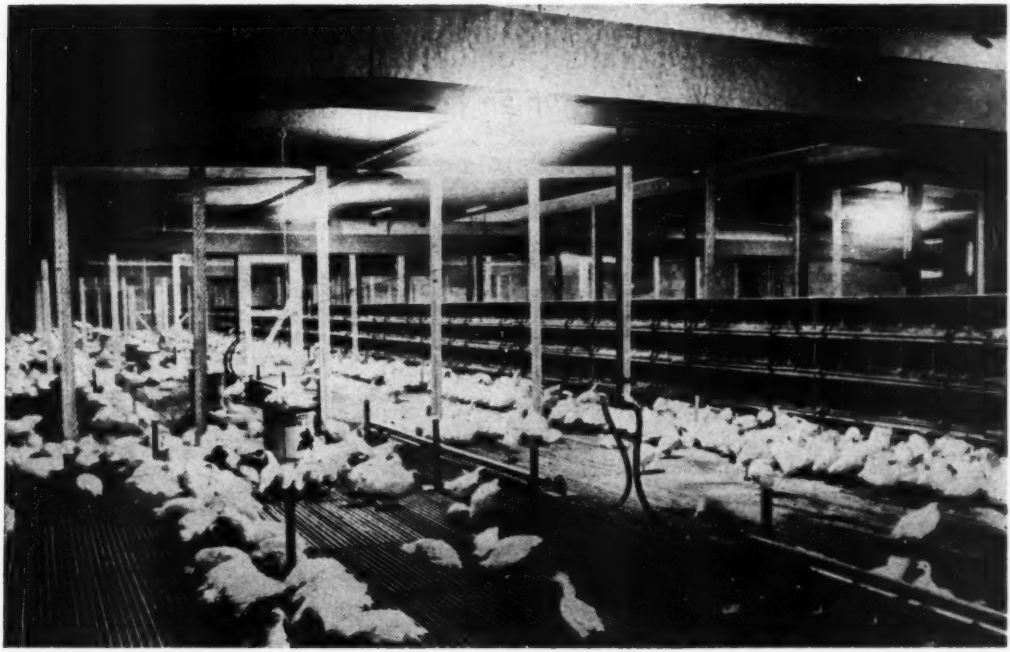
Simpson says there was an immediate increase in the rate of gain when the fans were installed. "We could not get along without them," he declares.

When one group of hogs is moved from a pen, the area is thoroughly cleaned and disinfected before other animals are brought in.

Their sanitation program, say the Mississippians, has paid off in three ways: 1) no disease, 2) it enables them to produce hogs cheaper, and 3) it virtually eliminates the fly problem. □ □

Disinfectant is sprayed on pens after group of hogs has moved on. Ten gallon electric spray unit is handled by Robert Willis.

No. 2 National Orange Edition



Mechanization does everything but gather eggs in this modern poultry house. Automatic feeders and waterers keep nourishment before the birds at all times. Pit cleaners remove litter from below the slatted floor. Ventilation maintains proper temperature and humidity in the house. Time-controlled lights furnish a 14-hour working day for the hens all year-round.

How Mechanization Helps Poultry Raisers Cut Costs Of...

- Feeding
- Watering
- Cleaning
- Egg Gathering
- Egg Processing
- Egg Cooling
- Ventilating

Mechanization of the poultry operation has probably progressed farther than any other farm chore operation during the past 10 years. It is estimated that in 1958 over ½ billion birds were fed mechanically.

The poultry farmer's margin of operation between production costs and prices received for his commodity have become very small. Mechanization has enabled him to cut production costs lower than he could with manual labor. He can also increase his size of operation by mechanizing. Teamed together, these factors have enabled him to stay in business and make a profit.

Poultry equipment manufacturers have developed equipment to take care of almost every type operation. Equipment is versatile enough to easily fit caged, floor, or even range operations.

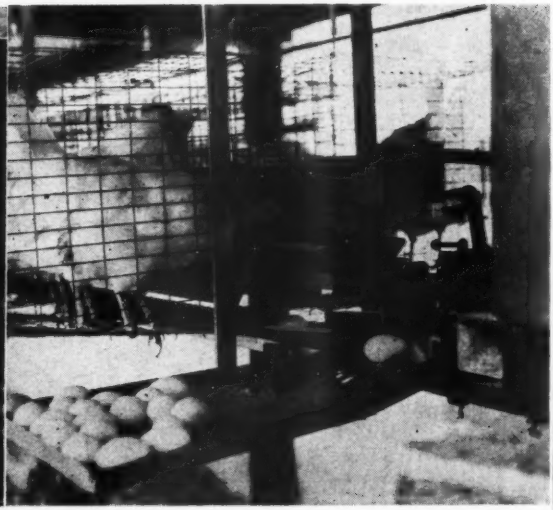
(Continued on following page)

No. 2 National Organs Edition

Continued from previous page . . .

Automatic Controls "Get the Chores Done" Leaving the Poultryman Free for Other Jobs

Complete accommodations for laying hens are provided by this commercial choring unit. Three tiers of roosts are each equipped with automatic feeders and waterers. Droppings fall to pit below and are removed by hydraulic pit cleaners.



Caged layers lend themselves to 100% mechanization including egg gathering. These hens, in back-to-back cages, receive water via upper trough, feed via center trough, and eggs are returned from roll-away cages by gathering belt along bottom.

Feeding: Mechanical poultry feeders are one of the most versatile pieces of chore equipment on the farm today. Units are available to handle wide or narrow houses, large or small flocks, single or multiple story houses and different types of feed. One unit will handle up to 1,500 or 2,000 feet of feeding system.

Feeding Space Requirements

Size bird	*Birds per foot of feeder*
Broilers (up to 8 weeks)	16
Broilers (up to 10 weeks)	14
Broilers (up to 12 weeks)	12
Roasters	10
Layers (light breeds)	8
Layers (heavy breeds)	6
Turkey Poults (up to 10 weeks)	10
Turkeys (heavy breeds)	5

Feeder Horsepower Requirements

Motor size *(Capacitor or Rep. Ind.)*	Feet of Feeder
¼ hp	up to 250
⅓	" " 500
½	" " 800
¾	" " 1000-1250
1	" " 2000

The same units are used to feed baby chicks or grown birds. Either adjustable legs or winch-controlled chains permit a height adjustment from about 4 to 16 inches to fit any type bird. Most feeders are equipped with a taut wire, grill, or snap-on guard to prevent chickens from roosting on feeder trough.

Feeders come equipped with a 500-1000 pound feed supply hopper. Most hoppers have a built-in agitator to prevent bridging of feed. Many operators incorporate an auger system to carry feed from their bulk storage bin to this hopper. Pressure switches are used to start and stop augers automatically.

Control of the feeder is best done by a time clock switch. Many operators prefer to feed the birds several times a day. The time clock control can be set to start the feeder, run it for a predetermined period of time and stop it. The cycle can be repeated as often as desired.

Watering: Research repeatedly shows that poultry of all kinds need an ample supply of palatable water within 10 or 15 feet of their feeders for the best production. In line with this, most poultrymen provide watering troughs above, below, or adjacent to the feeding troughs, or use automatic poultry fountains strategically located near the feeders.

Water should be warmed to about 50° F for utmost consumption by the hen. This can be done by thermostatically-controlled cartridge type immersion heaters in fountains or by the correct amount of heating cable in troughs to maintain the desired 50°F. water temperature.

Most watering troughs use electrically operated solenoid water valves to maintain proper water levels. Drug proportioners are available for use in conjunction with poultry waterers. They automatically measure and blend disinfectants and medicines into the drinking water. Most units operate by water pressure of the system.

Cleaning: Great strides have been made in the development of poultry house pit cleaners. This unit eliminates one of the most unpleasant of drudgeries for the poultryman—removing about 300 pounds of droppings per day per 1000 birds. Today some half dozen companies offer manufactured units for sale.

Cleaners are usually of the paddle type and come in widths for 4, 6, or 8 foot pits. One 3 or 5 hp unit will clean pits up to 200 feet long. On hydraulic types, one power unit can serve more than one cleaner on the same floor or on floors above or below. About ten minutes are required to clean a 100 foot long pit.

Pit cleaners offer several other benefits. Frequent cleaning (every 2 or 3 days) reduces fly problems and associated diseases because eggs do not have time to hatch. Odors are kept to a minimum. The house remains drier as excess moisture in droppings is carried away before evaporation occurs.

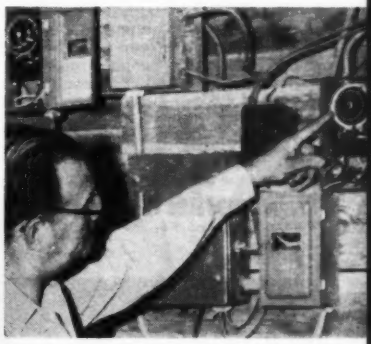
▲ **Egg processing** begins as eggs are conveyed to room for cleaning, grading, candling and packaging.

Time clock controls play an indispensable role in automatic poultry feeding, watering and lighting. ▶

Egg Gathering: The last time-consuming chore to be mechanized for the poultryman is egg gathering. Research shows that mechanization can reduce time for this operation by over 60% over hand gathering.

Gratifying progress has been made with mechanical egg gatherers for caged layers. Many farmers have built satisfactory units and now at least three manufacturers have commercial units for sale. Most of them use a web belt to carry eggs from roll-away nests to a central handling point for processing.

The same units can be used with specially designed roll-away laying nests for non-caged birds. The biggest problem is to get the hens to lay all their eggs in the nests.



Broiler growers even start chicks with completely mechanized feeding and watering which will bring them to market age with practically no human labor involved.

Egg Cooling: From the nest to the breakfast table, time, temperature and humidity affect the quality of the egg served. Consumers are demanding more good eggs or eggs with high "I.Q." (interior quality).

Maintaining this quality begins when the egg is laid. Eggs should be gathered as soon after laying as possible and quickly cooled to 50-55°F. at 70-80% relative humidity.

Factory-built egg cooling cabinets are available in sizes up to 17-case. They come completely assembled, ready to plug in. Packaged refrigeration units for either ceiling or wall mounting are available for those who wish to build their own walk-in egg cooling rooms. These rooms should be as nearly square as possible for minimum wall area. Check with manufacturer as to room size to fit unit. Provide at least 3½ inches insulation in walls, ceiling and floor. Protect insulation with a vapor seal on the warm or outer side. Use a refrigerator cabinet type door with tight door gaskets.

Ventilation: Ventilation is especially important with the trend toward less area for each bird in closed houses. Average sized layers produce moisture at a daily rate of 2½ gallons of water per 100 hens. This moisture causes condensation, rust, mildew, wet litter, objectionable odors and even disease if it is not removed. Some can be removed through frequent removal of droppings with pit cleaners. The remainder must be removed with ventilating fans.

Positive ventilation systems should be designed for each individual house. Take into consideration such variables as climate, number and type of birds being housed, building wall and ceiling construction and insulation.

A properly ventilated house will maintain dry, healthy conditions which in turn produces healthier birds, higher production, and cleaner eggs. □ □

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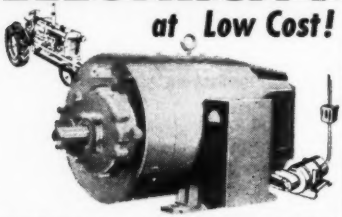

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Onan also builds complete engine-driven electric plants — portable, mobile, emergency models, 500 to 150,000 watts.

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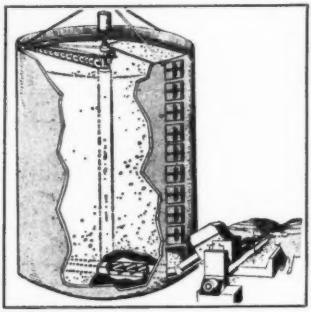
The Columbiana Pump Co.
RAILROAD STREET
COLUMBIANA, OHIO

WHAT'S NEW

in equipment

A mechanical system for leveling silos during filling and also for feeding out of a 30-foot diameter silo is now being made by the James Mfg. Co., Fort Atkinson, Wisc. The new system distributes feed evenly in the giant tub silo, then feeds it out at the

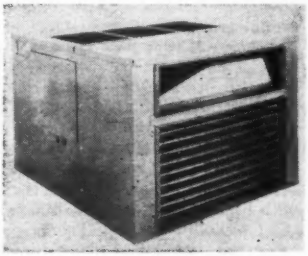


push of a button. Key to the system is the 6-foot-tall, 2-foot-wide steel cylinder suspended under the auger during filling. Slowly raised as the silo is filled, the cylinder leaves a permanent two-foot hole in the silage.

"The Way Cows Will Be Milked On YOUR Farm Tomorrow," is the title of a new 32-page planbook available free from the makers of Surge dairy equipment. It includes sections on how to save hundreds of miles lugging milk and feed with a milking parlor, how to plan for most efficient loose housing, how to eliminate daily manure handling, head off udder troubles, boost milk production and quality. The book also contains an up-to-the-minute collection of pictures, drawings and "how-to-do-it" data on parlor milking. For your free copy write to Dept. EF, Babson Bros. Dairy Farm Research Service, 2843 W. 19th St., Chicago 23, Illinois.

Dairy farmers who still carry heavy milk pails and cans from cow to cooler can now have an inexpensive direct-to-bulk-cooler automatic pipeline. The unit, called the Zero "Step Saver," is made by the Zero Corp., Washington, Missouri, and is an accessory to the Zero vacuum bulk cooler. The stainless steel pail is set up in the milking area, milk is poured into it, and the bulk cooler's vacuum automatically draws the milks to the cooler, shuts off when pail is empty.

A new, one-piece, 2 hp heat pump, made especially for small homes, is now on the market. Carrier Corporation, Syracuse 1, N. Y., its manufacturer, says it is a complete central heating and cooling system. It is placed on a three-foot square concrete slab outside the house. Because of its simplicity, it represents substantial savings over previous models, according to Carrier.



RESEARCH NOTES

By J. P. SCHAENZER

Mechanical feeders in broiler houses of 6,000 to 12,000 birds cost less for equipment and labor at $1.80 per hour than either trough or hanging feeders—*N. Carolina State College*

Swine, fed pelleted barley rations, gained 11.8% faster, took 9.8% less feed and saved labor over those eating it in meal form—*N. Dak. Agric. Coll.*

Comfortable dairy cattle stalls can mean more milk, less injuries, cleaner animals, more lying down time—*W. Va.*

By sprinkling stacked hatching trays for 10 minutes and hosing them with high-pressure air and water, one person can clean 125 in an hour—*Univ. of Kentucky*

Poultry is more tender if aged at least 12 hours before freezing—*USDA Western Utiliz. Div., Albany, Calif.*

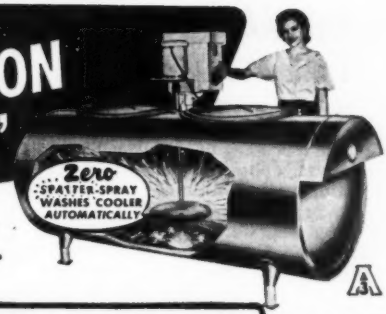
Three years of cotton irrigation test results indicate increased fibre length and fineness uniformity—*Univ. of Ark.*

Pigs made faster gains when water warmed electrically to 45°F. was always available to them rather than unheated water, which was usually frozen—*Iowa State Coll.*

To get the most uniform Easter lily blooms, the bulbs must be stored at 31° to 45°F. up to potting time—*N. Carolina*

Automation is feasible and being used successfully to feed hogs, clean pens, and dispose of wastes in confinement hog operation—*Univ. of Ill.*

"ZERO AUTOMATION PAYS OFF!" —SAYS JEROME COPLEY of Wellsboro, Pa.



"I CHOSE A ZERO FOR ITS AUTOMATIC WASHING AND MANY OTHER FEATURES"

"I believe the future for a dairyman is very bright. I chose a ZERO bulk milk cooler for these reasons: First, a vacuum tank for its many advantages. Automatic Washing, suction to draw milk into the tank. Its strength, economy and minimum space required. ZERO is surely the tank of and for the future. I recommend it to any dairyman." — Jerome Copley; Wellsboro, Pa.

12

FREE BOOK! Tells how to make more money with milk. Gives full information about ZERO T-20 BULK MILK COOLERS. Includes dimensions and sizes of different size ZERO Coolers. Shows how easy it is to slide and fit the round ZERO into your milk house. Write now!

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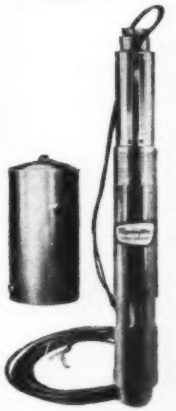
more water!

the Rapidayton DOLPHIN* SUBMERSIBLE

a pump you can't see or hear
can't freeze • never needs oil
gives more water, more pressure



At last, a pump that gives you all the water you need, every place you need it—with much greater pressure. It's the Rapidayton Dolphin submersible. Goes into the well (to 500 feet), where it operates completely submersed. Easy to install. Fully automatic. Low cost—compares with deluxe jet system. Gives more water for your dollar. See it at your dealer's and write today for booklet, "What Kind of Water Pump Do You Need?"

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The efficiency of a bulk cooler depends upon how direct the cooling method is. Sunset Coolers employ a method called *Positive Refrigerant Control.* A refrigerant flows through passageways which are a part of the inner liner itself. No water or surrounding air is cooled . . . only the milk. There is no water filled chamber to corrode . . . no pump working constantly.

Because of *Positive Refrigerant Control,* Sunset Coolers operate only 3 to 5 hours a day compared with 16 to 24 for other types. Electrical costs are lower . . . There is considerably less wear on mechanical parts.

For further information on Sunset's Positive Refrigerant Control, see your local Sunset Dealer or write to the address below.

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110 Volt
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WEED KING MODEL ES-700 KILLS WEEDS

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1 ISLAND AVE. BATAVIA, ILL.

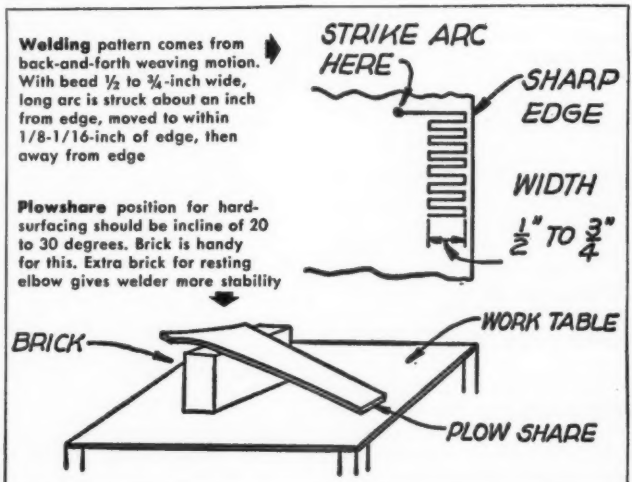
How To Hardsurface Plowshares

By ERIK MADSEN

Hardsurfaced plowshares last four to five times longer than those that are used as received. Also, hardsurfaced shares are self-sharpening and eliminate the drag on tractors due to dull plows. Best results are obtained when the shares are hardsurfaced often by the farmer himself before wear progresses to the point where it is necessary to replace the edge. Any farmer with an arc welder can hardsurface a share in ten to fifteen minutes.

Use Electrode or Powder

There are two types of materials used for hardsurfacing plowshares. The first is a special hardsurfacing metallic elec-


Welding pattern comes from back-and-forth weaving motion. With bead ½ to ¾-inch wide, long arc is struck about an inch from edge, moved to within 1/8-1/16-inch of edge, then away from edge
STRIKE ARC HERE
SHARP EDGE
WIDTH
½" TO ¾"
Plowshare position for hardsurfacing should be incline of 20 to 30 degrees. Brick is handy for this. Extra brick for resting elbow gives welder more stability
BRICK
WORK TABLE
PLOW SHARE

trode that is used in the same way as mild steel electrodes used for general repair welding. These deposit a surface that resists both abrasion and impact. Using an electrode is the easiest, quickest and most commonly-used method.

The second method uses a hardsurfacing powder that is fused to the share with the heat of a carbon arc. This method offers the least possibility of burn-through on thin edges. It is particularly suited to cultivator sweeps, harrow discs, and other parts that have very thin edges.

The first step in hardsurfacing plowshares is to select the side of the sharp edge that wears. It is important that *only* the wearing side be surfaced. This makes the shares self-sharpening. The unsurfaced side wears back slightly faster than the hardsurfaced side so that a sharp edge is maintained.

Surface Must Be Clean

The side of the sharp edge that is to receive the hardsurfacing should be thoroughly cleaned. Grind on a power grinder until the metal is bright.

The technique for depositing the hardsurfacing material with the metal electrode is easy. The bead should be put on with a weaving motion. By placing the elbow and arm on an extra brick, the weldor can get this weaving motion by a slight twisting of the wrist.

The principal thing to watch out for is burn-through on the thin edge. Staying ⅛ to 1/16-inch back from the edge and using a fairly fast weaving motion will eliminate burn-through, yet permit the deposit to flow out to the edge.

Hardsurface With Powder

Hardsurfacing with powder is especially good for work with thin edges. The heat of the carbon arc that melts the powder and fuses it to the work is spread over a larger area and has less tendency to burn through. The work is positioned so the surface is flat. The powder is put on about 3/16-inch thick and ½-inch wide.

It is best to use a carbon electrode which should be ¼-inch in diameter and sharpened to a dull point. The carbon is inserted in the electrode holder in the same manner as a standard electrode. The machine should be set at 40 amperes.

The arc is struck somewhere on the work away from the powder. A fairly long arc works best. Shorter arcs concentrate the heat more and increase the tendency for burn-through. A weaving motion similar to that used with the metal electrode is used. When welding near the edge the weave should be diagonal to the edge rather than straight into it. Also, as with the metal electrode, it is best to stay back 1/16-inch from the edge.

The deposits made with metal electrodes have more toughness than those made with the powder. They will take a lot of pounding from rocks and stones without cracking. On the other hand, the deposits made with the powder have exceptional abrasion resistance, and can be put on thinner sections. Either one will extend the life of a plowshare by four to six times that obtainable from a new, unsurfaced share. □ □

PEERLESS Portable - Stationary ROLLER MILLS

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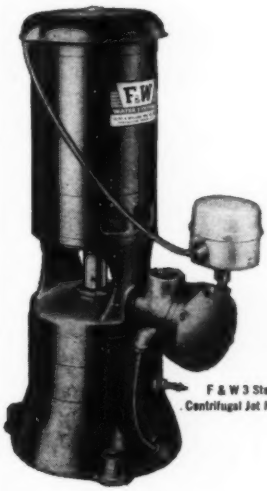
PEERLESS EQUIP. CO., Dept. 303, Joplin, Mo.

HOW TO GET

MORE WATER FOR LESS MONEY

FROM DEEP WELLS



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When you install an F & W "Big 6" Water System, you can pump from greater depths in smaller wells. For example, you can go to 200 feet in a 3-inch well, or 150 feet in a 2-inch well, and pump efficiently and adequately. This means more water at lower cost. Performance, long-life, low cost operation and dependability are assured by F & W's big six advantages: exclusive 4-volute design, matched engineering, precision manufacture, high pressure injector, patented automatic control valve, and exclusive "speedichange" rotary seal. For full details see your F & W dealer or write for Folder No. 501.

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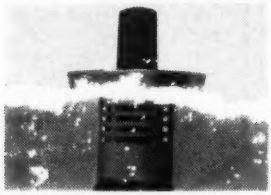

New, full-time underwater filter traps lint where it forms—under water. Unique, new Detergent Dispenser is on top of filter.

Push one button! You get proper wash and spin speeds... proper wash and rinse temperatures... for all washables!

No more guesswork! A simple chart on the underside of the lid tells you which button to push. Hotpoint Automatic Clothes Minder does the rest! What beautiful washes you get—spanking clean, almost lint-free!

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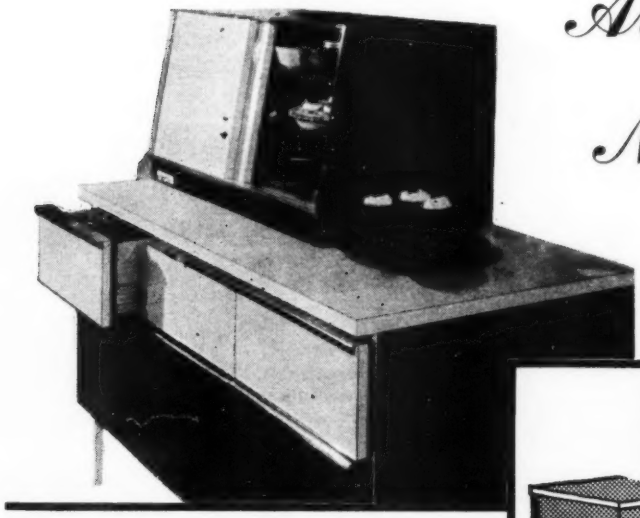
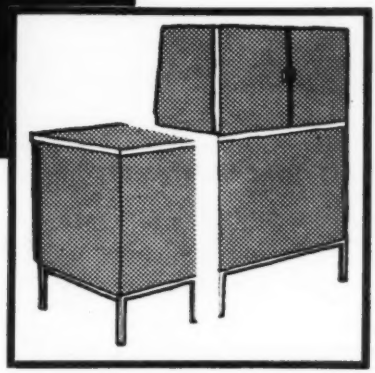
THE FARM HOME BY RUTH GAFFNEY

Refrigerators Are New . . .

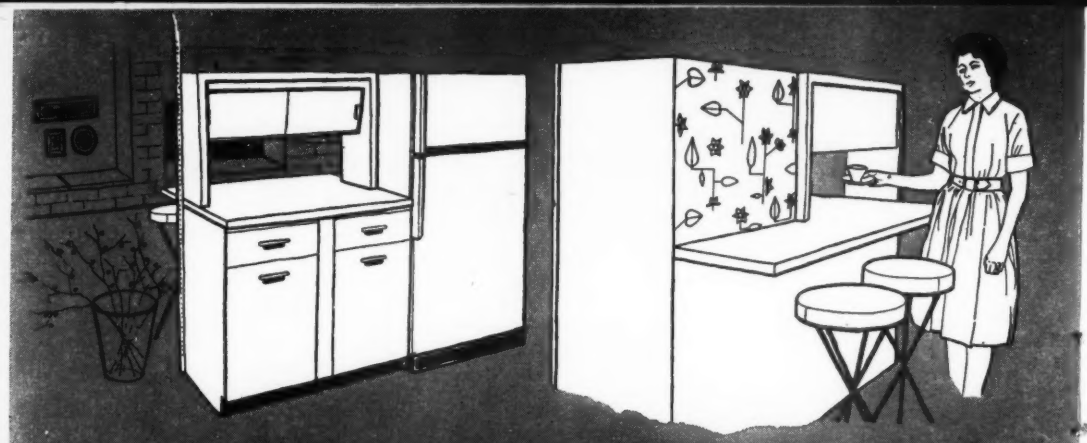




FUTURE refrigerated food cabinets may look like this. Paneled in maple and free-standing, could be placed anywhere. Lower drawers for frozen foods; upper drawers and section atop counter for fresh food storage. Sections (see above) *could be added as additional space was needed.*

IT'S NOT EVERY DAY we can have a glimpse into the future and know what is just ahead of us. But it is our pleasant privilege to report that the makers of refrigerators are giving us this clairvoyant peek—a kind of "what do you think of it?" "how do you like it?" preview. We think this makes sense because when you make a major investment in an appliance, you want to know that it is going to serve your needs and won't become obsolete almost before you get it into your kitchen.

You have a genuine surprise in store if you haven't looked at refrigerators lately. They are improved in design and function almost more than any other familiar appliance. Many owners think of a refrigerator as the work horse of the kitchen and believe that as long as it runs, it's doing its job. This is no more true than it is for the family automobile. (Please turn page)



A room divider refrigerator doesn't have to be an idea only for the future. Here's a way you can have one in your home today.

You'll need: 1 modern refrigerator (which means it has no unsightly coils on the back); several base kitchen cabinets (depending upon the amount of space you have); an attractive 12-inch high spice cabinet with sliding glass doors to form a pass-through.

Add one 48-inch deep laminated plastic counter top and fit snugly around refrigerator. Choose attractive wallpaper to match your color scheme and apply to back of refrigerator. A finished plywood panel under eating bar completes the Good Idea.

This up-to-date and practical plan is equally good for remodeling or for new home construction. Also, it puts into practice basic principles of good planning.

Is Your Refrigerator in a Convenient Place?

► do you "walk around the door" every time you open it because door opens on wrong side?

► do you walk back and forth to a remote hallway or inconvenient niche far removed from the kitchen each time you want something from the refrigerator?

► is your kitchen unusually large and is the refrigerator a "country mile" from the sink?

► do you find your arms full of milk bottles, vegetables, etc., and no cabinet next to the refrigerator on which to put them?

APPARENTLY simple inconveniences such as the ones outlined on the opposite page can make you walk extra miles every day. Kitchen planning experts have been telling us for years how much easier it is to work in a kitchen with conveniently placed working appliances. We know of no better way to update a kitchen than by taking the refrigerator out of an *inconvenient* spot and putting it in a *convenient* one.

We believe you will do yourself a great favor if you sit down with a cup of coffee in your kitchen some day when all is quiet and give the present location of your refrigerator a little study. It can well be an investment for you in energy saved and time gained.

If any one of the answers must be 'yes' to the questions here, you can be sure you're wasting your energy.

Types of refrigerators: For many years it was possible to buy only the large, bulky, space-consuming upright refrigerator. Within the last few years designers have been thinking in terms of built-in units. You now have a choice among these as to size, features and arrangement, sometimes with matching built-in freezers. They may be stacked one on top the other, side by side, or separated in different parts of the kitchen.

Also available is a combination refrigerator-freezer which hangs on wall and looks like other kitchen cabinets.

Refrigerator insulation has been greatly improved—a contribution to flexibility in design and efficiency in use.

Advantages of NEW Refrigerators

MORE inside storage space in same, or smaller, outside dimensions.

GENEROUS space for frozen food storage in contrast to old-fashioned U-type evaporator which just made ice cubes.

SHELVES adjust for height, swing out or slide out for greater accessibility.

VENTILATION at front eliminates unsightly gap between refrigerator and wall in back; lines up with standard-depth kitchen cabinets, takes less space in kitchen.

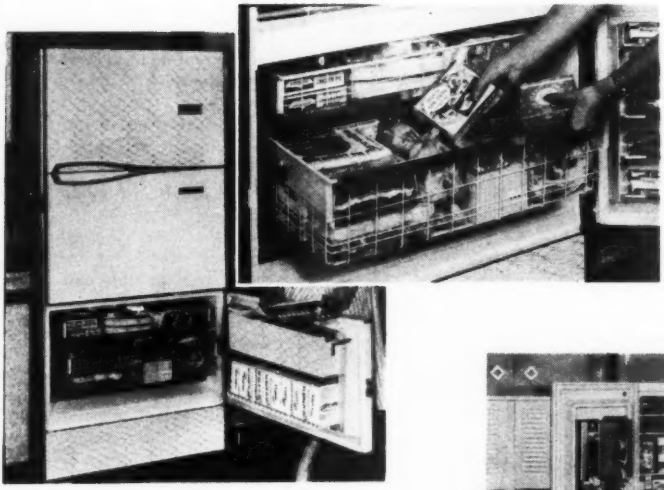
DOORS swing within own dimensions, can be fitted flush to adjoining cabinet or in a corner without those dirt-catching, hard-to-clean few inches allowed for thickness and swing of the door.

FRESH FOODS can be stored for longer periods because of more efficient operation, lower temperatures, better distribution of cold within food compartment.

There's a wide choice of colors or you can still have conventional white with a combination of colors.

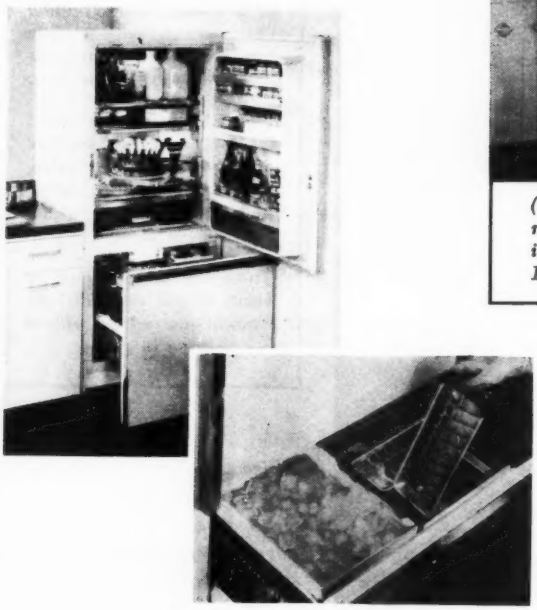
(Left) A 13-cu. ft. refrigerator to built in or rest on base cabinets. Doors come in colors; interior features include slide out shelves.

Refrigerator Features



(Left) Frost never forms in this 14 cubic foot refrigerator and you never have to defrost. Other innovations: easy storage sections, slide-out frozen food baskets. Ice cubes eject from trays into convenient storage basket on door.

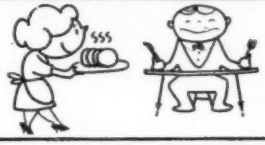
(Above) This 41-inch-wide two-door combination refrigerator-freezer follows trend of large capacity in small space. Has 6 cubic feet of freezer space, 12 cubic feet for fresh food storage.



(Left) Largest farm capacity needs are met with this 15 cubic foot model. Straight line design permits flush fit in corner, no space needed for door to swing at side. Vegetable bins, shelves swing out. Convenient ice cube storage.

NEVER AGAIN A RUINED ROAST!

Husband late? Don't worry about that roast in the oven.



You can serve it hours later, still hot, rare, juicy!

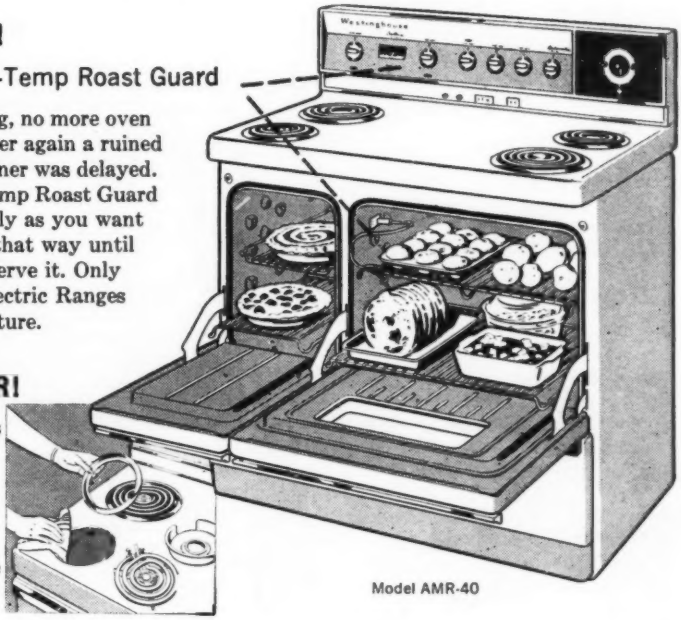
NEW WESTINGHOUSE ELECTRIC RANGE KEEPS MEAT HOT, JUICY, DONE TO YOUR TASTE!

even if dinner's delayed for hours!

NEW COOKING MIRACLE!

Exclusive Serv-Temp Roast Guard

No more worrying, no more oven watching . . . never again a ruined roast because dinner was delayed. Amazing Serv-Temp Roast Guard cooks meat exactly as you want it, then keeps it that way until you're ready to serve it. Only Westinghouse Electric Ranges offer you this feature.



Model AMR-40

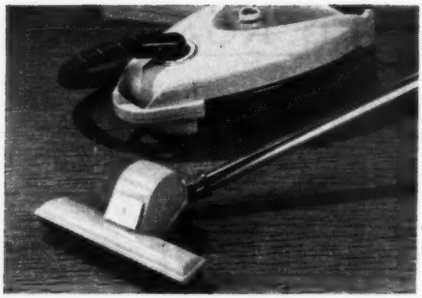
EASIEST CLEANING EVER!

All surface units and oven heaters are exclusive Westinghouse Plug-Out design . . . can be completely removed for easiest, fastest cleaning ever. No range is modern without Plug-Out Units . . . and only Westinghouse has them.

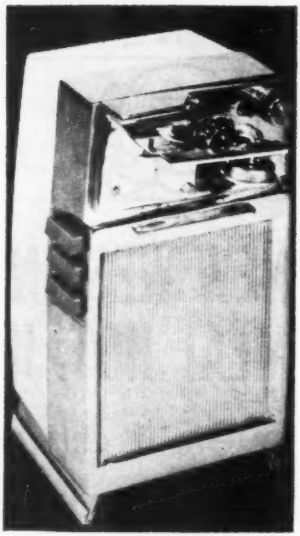
WESTINGHOUSE GIVES YOU EVEN MORE:

- Built-in Rotisserie
- Two Miracle Sealed Ovens
- Automatic Grill
- 1001 Surface Heats
- Automatic Timer
- Super Corox Unit
- Automatic Surface Unit
- Full-width Storage Drawer

YOU CAN BE SURE... IF IT'S Westinghouse



Specialized attachments give this new vacuum cleaner increased versatility. Revolving brush attachment has an air motor to turn brush; cleans rugs, picks up embedded dirt and stubborn surface litter. Swivel hose makes for ease in use.



Electric can opener is amazingly popular new kitchen appliance. Sits on counter and opens any size, from large fruit juice can to the small sardine. Place can at cutting wheel, push a button, can is opened neatly, safely, quickly.

We Thought You'd Like...

To know about the newest, most useful appliances we saw at the January Shows in Chicago

Shaped like a hat box, feminine styling of this vacuum cleaner makes it compact, light and easy to use. Stands on end and takes up little space for storage. Extra large disposable bag for dirt needs replacing only every 30 to 60 days. Perfect for cleaning stairways and other confined areas.

Bleach as a laundry aid is used by most families who do laundry at home. Properly used, it whitens, brightens, and gives more sanitary results. This homemaker is pouring into a special compartment a measured amount of liquid bleach; machine will automatically inject it into the wash at the correct time, diluted so that bleach will not harm fabrics.

Now you can have an automatic electric percolator made of glass. Fun of seeing coffee brew is made more visible by a small light in percolator's mechanism in the bottom. Makes 2 to 9 cups. Handle and base come in either ivory or black, with polished brass trim.

Now a

KitchenAid®

for every kitchen!

THE NEW KITCHENAID PORTABLE DISHWASHER

Ideal for the smaller farm kitchen or where you do not wish to install permanently or remodel. No installation cost…no counter alterations. Put it to work the day you buy it. Rolls easily from table to sink…hooks up in seconds…washes complete service for ten—plus large pots and pans. Gleaming porcelain inside and out. *And* this newest of portables brings you the same exclusive washing and drying features of the famous KitchenAid built-in dishwashers also shown.

KitchenAid dishwashers, the finest made…by The Hobart Manufacturing Company, Troy, Ohio, the world's largest manufacturer of food, kitchen and dishwashing machines.

KITCHENAID BUILT-IN DISHWASHERS

Easy-loading, cushion-coated racks (upper rack adjustable for tall glasses, larger utensils). No hand-rinsing. Special warm-up feature clears line of cool water…dual strainers keep wash water clean. Big revolving power wash arm for thorough washing and rinsing; sanitized, flowing hot air blower for sparkly drying—exclusive with KitchenAid. Choose from many models in stainless steel, antique copper, traditional white. Can be color-matched locally.

Send coupon for free, colorful folder.

KitchenAid Home Dishwasher Div.
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Dept. KEF, Troy, Ohio
In Canada, write 175 George St., Toronto 2, Canada

☐ Please send literature on portable.
☐ Please send folder on built-ins.

Name.....

Address.....

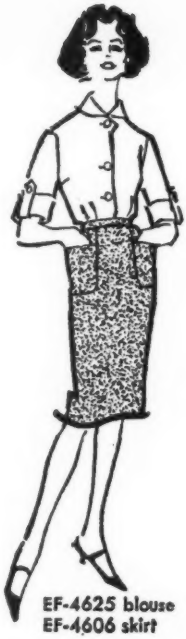
City.....*Zone*.....*State*.....

Wardrobe Favorites

EF-4913

EF-4887

EF-4943 EF-4929



EF-4625 blouse
EF-4606 skirt

EF-4920

EF-4920 Classic shirtwaist with action yoke back, full skirt of unpressed pleats. Long cuffed sleeves. Misses' and junior sizes 10-18, 11-15. Size 14 requires 6 yards of 35 inch fabric. 50¢ (60¢ in Canada)

EF-4913 Monogrammed shirtwaist with surplice bodice. Short cuffed sleeves, released darts at waist. Includes pattern for monogram. Misses' sizes 12-20. Size 14 requires 3½ yds. of 35 inch fabric. 65¢ (75¢ in Canada)

EF-4887 Flattering, easy-to-wear dress with contrasting collar, detail V-neck, three-quarter sleeves. Half-sizes 12½-20½. Size 16½ requires 4 yards of 35 inch fabric. 65¢ (75¢ in Canada)

EF-4929 Mother-and-Daughter Matchmates. Sports outfit of full-gathered skirt and tailored blouse with short sleeves, accented by a contrasting sash. Misses' and junior sizes 10-18, 9-15. Size 14 requires 2 yards for blouse, 4 yards for skirt, 1 yard for sash; 36 inch fabric. 65¢ (75¢ in Canada)

EF-4943 Daughter's dress to match mother's (see EF-4929 above). Identical in every detail. Girls' sizes 4-12. Size 8 requires 1½ yards for blouse; 3 yards for skirt, 1 yd. for sash; 36 inch fabric. 50¢ (60¢ in Canada)

EF-4625 (blouse) and **EF-4606** (skirt). Convertible-collared blouse with tab details on sleeves and top button; paired with a slim, patch-pocketed skirt.
Blouse: misses' sizes 12-20, Size 14 requires 2¼ yards of 35 inch fabric. 45¢ (50¢ in Canada)
Skirt: misses' and junior sizes 23½-25½, 23-28. Size 26 requires 1⅞ yards of 45 inch fabric. 35¢ (40¢ in Canada)

EF-4918 "Instant" dress, so quick and easy you'll make several in different fabrics. One pattern piece for full skirt, scoop neck with V back. Misses' sizes 10-18. Size 14 requires 4½ yards of 36 inch fabric. 50¢ (60¢ in Canada)

Send your remittance (in coins) for above patterns to:
ELECTRICITY on the FARM, P.O. Box 986, Dayton, Ohio
In Canada: 462-464 Front St. West, Toronto 2, Ontario
Add Five Cents for each pattern for First Class Mailing.

EF-4918

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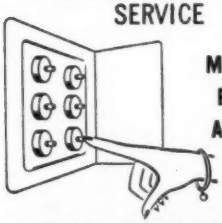
No, NEVER change fuses again

JUST PRESS THE BUTTON TO RESTORE ELECTRICAL SERVICE



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Safest! Underwriters' Listed.

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BARNES

Sabre-Jet

NEW

DELUXE WATER SYSTEMS

Brand new self-priming jet water systems with capacities to 2700 GPH, depths to 180 feet. Convertible (no extra parts) for deep or shallow wells. Exclusive tri-color styling. Write for free Water System Selector (Form No. 332-EF). Barnes Manufacturing Co., Mansfield, Ohio. Dept. K-39. 3989

BARNES

IT'S A GOOD IDEA . . .

Defrost your freezer often and remember to wash gasket around the lid or door with soap or detergent suds and water. Rinse and wipe dry.

Heated milk forms a "skin". This may be prevented by covering pan, by floating a small amount of butter or cream on surface of the milk, or by beating milk during the heating time.

Cucumber pickles will be kept crisp by adding a grape leaf or two to brine.

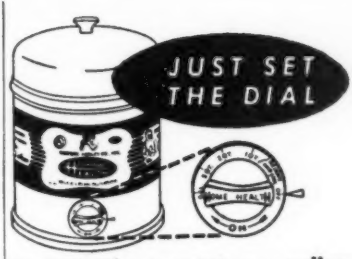
Store milk at 35° to 40° F. at all times to safeguard its healthfulness and flavor.

Appliance cord with neoprene jacket is newest aid to neatness and efficiency. Nontangling, it retracts to a compact 18-inch length but is actually 6-feet long; easy to keep clean, is not damaged by oils or fats.

Pimientos will keep longer if you pour a little vinegar over the top of those you don't use. Replace cover of jar, store in refrigerator and worry not!

Cream whips best when it's very cold and at least 24 hours old. Chill bowl and beater before adding cream. Blades of beater should not be completely covered; whip it fast enough so it will double in volume in 2 to 3 minutes.

A refresher both healthful and delicious: combine 3 tablespoons fresh lemon juice, 3 tablespoons honey and 1 cup boiling water. Stir with cinnamon stick if desired. Good when you think you're taking a cold!



to pasteurize a quart or a gallon —in the fastest time ever!

HOME HEALTH "Quick-Set" PASTEURIZER

Now you can pasteurize the amount of milk you need as you need it . . . one, two, three quarts or a gallon at a time. Just set the dial for the right amount . . . the rest is automatic. The only home pasteurizer with this new engineering development that takes far less time yet assures greater accuracy. Laboratory tested for complete kill of all harmful bacteria.

CUTS PASTEURIZATION TIME 40%

You can pasteurize a gallon in 40% less time . . . a quart in less than 15 minutes! Makes it easier, quicker, than ever to have disease-free milk.

COLORS *to match your kitchen*

Available in decorator colors of yellow, pink, turquoise, and white. You'll be proud of its beauty, its convenience, its dependability. 1 gallon capacity. Guaranteed for 1 year.

Ask to see the new HOME-HEALTH "Quick-Set" Pasteurizer at your dealer or write for FREE FOLDER.

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Dept. E, ROCHESTER, MINN.

REMOVE UGLY

RED

RUST

with a Diamond Iron Removal Filter Leaves water clear, sparkling-palatable. Write:

OSHKOSH FILTER AND SOFTENER CO.
Oshkosh **Wisconsin**

It's more light—less cost, with

FLUORESCENT LAMPS

Kitchens are ideal places for fluorescent illumination. General lighting from the 8-foot ceiling fixture plus local fluorescent light at work counters make this a pleasant place to work.

By J. P. DITCHMAN

If you want more light for less watts, fluorescent lamps are for you. Besides this, they give less heat, more diffused light (easier on the eyes) and much longer life than regular incandescent lamps.

Even though the regular incandescent lamps are still the more widely used, fluorescents are gaining in use and popularity. Lower cost is probably the reason, along with the other points mentioned above.

Fluorescents Don't Burn

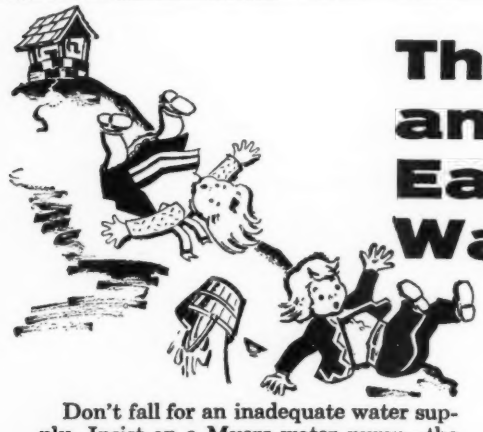
Fluorescent lamps produce light differently than filament lamp bulbs. In filament lamps, glowing tungsten wire gives off light in one small area. Fluorescents don't have filaments running from end to end. They are filled with a mercury vapor which, when current is passed through it, causes the phosphor coating inside the tube to glow. The phosphor is responsible for the different colored fluorescents. Different phosphors glow in different colors.

Fluorescent lamps need an outside electrical device, called a "ballast," to start and regulate them. Without the ballast they would burn out. There are several types of ballast and lamp combinations. The most widely used is the preheat circuit, which heats the terminals at either end of the lamp before it lights. This gives maximum life and lowest cost.

What Does "Starter" Do?

The "starter" is an automatic switch device. It gives the lamp the initial surge of current it needs to start glowing. Although starters may look alike, there are different types, and the right starter must be used with each lamp, or it won't work right.

With instant-start or slimline fluorescents, the starter is not needed. A transformer



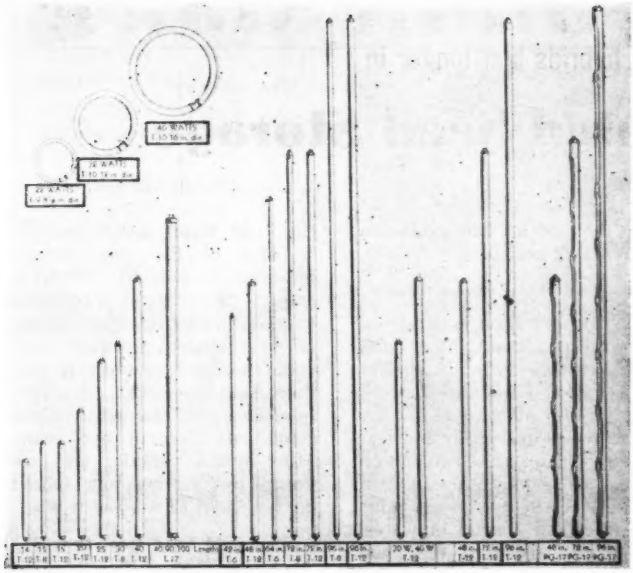
There's an Easier Way...

Don't fall for an inadequate water supply. Insist on a Myers water pump – the easy, dependable way to get water when and where you want it. See your authorized Myers pump dealer.

Myers

The F. E. Myers & Bro. Co.

ASHLAND, OHIO KITCHENER, ONTARIO



Fluorescent tubes come in a wide variety of sizes, lengths and shapes. At extreme left are general line tubes from 14 to 100-watt sizes. Next are slimlines, with lengths from 42 to 96 inches. Rapid start tubes come in 30 and 40-watt sizes. Groups on right are high output and specially-grooved fluorescent lamps.

built into the ballast gives the needed voltage boost to start the lamp glowing.

Lamps Don't Heat Up

Since the lamps give off so little heat, they cannot keep themselves warm enough for efficient lighting in extreme cold, and light output is reduced.

Regular ballasts are designed to start fluorescents down to 50°F. Special ballasts are used for lower temperatures down to zero or even 20° below. Special types of fluorescent lamps, with higher lamp loading, draw more current, with resulting warmer bulbs, and are better suited to low-temperature use.

But even the warmer fluorescent lamps work best when used in fixtures that trap and heat the air around the lamps. To reduce cooling drafts, glass or plastic shields may be used.

Fluorescent lamps come in diameters from ⅝-inch (T-5) to 17/8 inches (T-17), and in lengths from 6 in. to 8 ft. Wattages run from 4 to 200.

The life of a regular fluorescent lamp is about 7500 hours, based on three hours of burning per start.

Some users encounter radio and television interference from fluorescent lamps. This is caused by the electrical radiation from the lamp, and can be minimized by proper use of line filters at each lamp or fixture.

Fluorescent lamps come in a wide variety of light color tones. Generally, the home line or deluxe warm are recommended for home use, and the standard cool white for farm utility buildings. □ □

from your own well or pond!

ELIMINATE IRON AND SULPHUR!

with the CD Pack which combines:

EVERCLOR
automatic chlorination to make water safe and to oxidize iron and sulphur.

EVERPURE
superfiltration and dechlorination to get rid of bad taste and odor.

USED ON FARMS EVERYWHERE—FOR THE BEST WATER IN THE WORLD

Find out how you can enjoy safe, clean water for cooking and drinking. **Write today for CD PACK details.**

This equipment can be purchased from your local Fairbanks-Morse dealer. See page 3 for his name.

EVERPURE, INC.
2627 West 19th Street
Chicago 8, Illinois

The WIDE-WIDE ROTISSERIE OVEN you've always wanted

The newest . . . most stylish 30-inch electric range available. SUPER GIANT OVEN and removable ROTISSERIE. Fully automatic, divided top includes Red Hot 'N Seconds Unit, and two Super Speed 6" "Kloz Koil" Units. Smart, refreshing, only 30-inches wide!

Monarch RANGE CO.

7039 Lake St., Beaver Dam, Wis.

Expensive foundation stock and hybrids last longer in

Refrigerated Seed Storage

For several years, small lots of valuable foundation seed have been kept under refrigeration at Coker's Pedigreed Seed Farm, Hartsville, S. C. This maintains the life of the seed and protects it against insect damage for years.

A new building was recently built on the farm so that large quantities of seed can be stored under controlled temperature and humidity. This building looks like a freezer-locker plant. It has four rooms with individual entrances, refrigeration units and controls. Eight-inch brick walls with four inches of spun glass insulation in the walls and floor and five inches overhead keep the cold in. The insulation is joined all around.

Small, Individual Motors Chosen

The refrigeration systems are standard condensing units and coils like those used in regular refrigeration rooms. Richard E. Gettys, corn breeder, says the individual units, run by 230-volt electric motors, were chosen over a single large unit for two reasons. First, the small units are air-cooled instead of water-cooled and, secondly, the small motors can run more economically.

By having four rooms in the building, each with separate controls, small grain, corn, tobacco, soybean and other seed can be stored under the conditions most nearly ideal for each, Gettys explains. Records will be kept for determining the best storage conditions for each seed. Plans are to keep corn at 40°F. and a relative humidity of 30-35%. The corn storage locker can hold about 2,000 bushels.

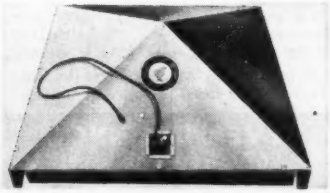
Value of the new storage building is twofold. First, it spreads the risk of a disaster year and insures constant supply of good foundation seed. Second, it makes it practical to produce large quantities of inbred lines in a single season and use those over four or five years. Most hybrid varieties are produced by crossing four inbred lines.

Why Cold Seed Lives Longer

Gettys explain why seed is refrigerated: "A seed is a living organism. As such, when it is kept at low temperature and low relative humidity, respiration is slowed down and life prolonged."

Before seed is refrigerated, Gettys says, it is sealed in a four-ply paper bag with polyethylene plastic lining. A remote thermometer is used to minimize door-opening during hot, humid months. □ □

CUT Brooding Costs with BAILEY'S *Electric* Brooders



Poultrymen in 10 southern states have cut their wintertime brooding costs to ½ cent or less than ½ kilowatt hour per bird by using Bailey's Electric Brooders.

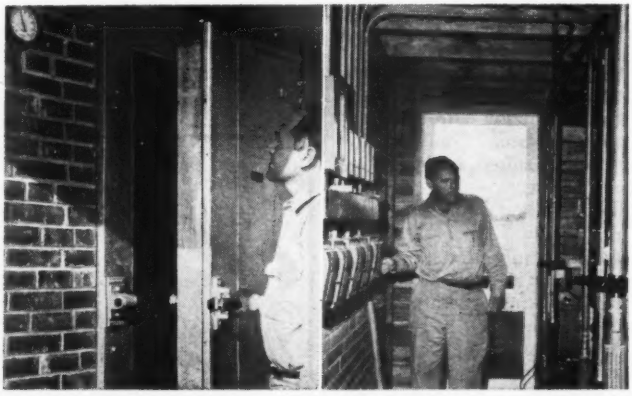
Performance like this is no accident. Poultrymen and agricultural and electrical engineers designed Bailey's Model 750. The rigid 72 x 72 inch hover has ½ inch of fiberglass insulation. Temperature is automatically controlled by dial setting. Unit comes fully equipped with pilot light, attraction light, 8-foot heavy duty cord. 750-chick capacity, 1500 watts, 115-120 volts.

Bailey's electric brooders were designed from the start to be the best!

Manufactured by

L. H. BAILEY & SONS

845 Broad Street, Athens, Georgia



Left: Freezer-locker plant? No, it's the refrigerated seed-storage building. Thermometers outside each room reduce need for door opening in hot weather. **Right:** Switch panel controls refrigeration in building. Refrigeration coils in each room remove heat in a manner similar to a home refrigerator or freezer.

JUNIOR PARTNERS

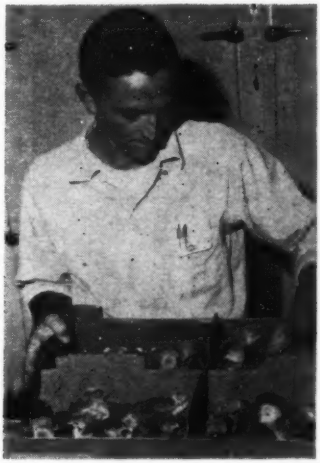
A start in FFA . . .

A love for poultry . . .

And lots of experience . . .

Enabled him to

Make His Own Opportunities . . . Electrically



Baby chicks hatched in his electric incubators are packed by Joe Davis. Between hatches, Davis cleans and inspects equipment. Electric alarm system lets him know at once if anything goes wrong with equipment.

Some say opportunity is where you find it. More often it's where you make it, and Joe Davis has used electricity, laying flocks and a hatchery to make opportunity for himself on a farm at Earl, North Carolina.

Joe has always been a poultryman at heart. As an FFA member, he kept 250 layers during his final two years of high school. He used the money he made to put himself through his first two years of poultry husbandry study at North Carolina State College.

Later, Joe worked for the Agriculture Extension Service in counties where poultry was a major business. But his ambition was to get back into the poultry business for himself. He made the move in 1955, starting with a 32,400-egg hatchery. His operation has grown to 11 incubators and 118,800 capacity. Most of the eggs for Joe's hatchery come from two flocks—his own 4200 layers and another flock of 3700 hens under contract. He has a temperature-controlled room where eggs are held to await hatching.

To step up egg production, he uses a variation of the controlled-lighting principle. The light period is extended 15 minutes per day every week. He simply resets the time clock every seventh day and the lights are turned on and off automatically.

Joe's incubators are electric. If temperature varies too much, or if a fan breaks down, an alarm sounds. Forced air draft keeps uniform temperature throughout the incubators. A 10-inch exhaust fan blows chick down out of the hatchery.

It looks like Joe Davis is making the most of his *two* big assets—opportunity *and* electric power. □ □

get details on the . . .

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DEEP LATER?

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. . . and for *less* than the usual price of a *single*-purpose jet pump! This high-quality electric jet water system converts quickly from shallow to deep well (90-ft.) operation by simply adding pipe and transferring jet unit to well-bottom. Up to 835 gal. per hr. Up to 50 lbs. pressure. Fits compactly under kitchen sink! Completely equipped. Hefty ½ or thrifty ⅓ HP ball bearing motor.

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DEMPSTER MILL MFG. CO.
600 S. Sixth, Beatrice, Neb.

It's a MUST!

NEW streamlined TANKMOBILE portable air compressor saves time and work. Low slung design makes moving safe and easy. Heavy duty single cylinder compressor. Electric motor or gasoline engine. Two tank sizes available.

Ask your dealer or write today.

THE CAMPBELL-HAUSFELD CO.
271-C Railroad Ave., Harrison, Ohio

Concrete water tank is kept filled automatically on McCurdy's dairy farm. Heifers need the water for proper growth, while older cows need it for top milk production.

8 Electric Pumps for 8 Wells Keep Dairy Herd Well-Watered

I can remember," says R. E. McCurdy, "when I spent two or three hours every day pumping water for livestock. And then they were not half watered. I think I appreciate our electric water systems more than most anything else."

Scattered about McCurdy's dairy farm at Century, Florida, are eight wells. There is a pump in each one. Four of the pumps are driven by ½ hp electric motors, three by ⅓ hp units and another by a 1 hp motor. He has extended water pipes to his pasture areas and installed mechanical watering devices so that his cows have all the water they want whenever they want it.

He uses concrete watering tanks. The valves that control water flow are opened and closed by means of floats. Fresh water spills into the top of the tank, eliminating any danger of drainage back into the water system if pressure is lost.

An adequate water supply is important for all livestock, McCurdy agrees. But he knows it is absolutely essential for his milking herd. □ □

One of eight electrically-driven pumps which draw water from McCurdy's eight wells is inspected by the dairyman.

DUFFY'S CAVERN

MAN is like a LAMP WICK—TRIMMED a LOT of times before he gets the right flame. . . . . Along the same line of thinkin': A BACHELOR is a fellow who has only himself to blame. . . . . "A COFFEE BREAK is ANY time you can get a cup for a NICKEL." (Francis O. Walsh in QUOTE). . . . . DASHBOARD: a TOBOGGAN. . . . . DAYDREAMER: a person who goes through life having a wonderful time spending money he HASN'T got. . . . . Zelda Malone sez: "Some of the BEST boy scouts are GIRLS." . . . . DELIVER: a vital part of your body. . . . . SUDDEN THOUGHT: HAPPINESS happens to people TOO busy to be miserable. . . . . OVERHEARD: "I've been eating too much." "Did somebody tell you?" "No, I got inside inflammation." . . . . ECONOMIC EXPERT: a fellow who knows tomorrow why the things he said yesterday didn't happen today. . . . . MATRIMONY: one STATE that permits a woman to work EIGHTEEN hours a day. . . . . TOURISTS are people who travel THOUSANDS of miles to get a picture of themselves standing by the car. . . . . EVERSTOPTOTHINK?—MOST fishermen are nothing but FABLE-MINDED sportsmen. . . . . Comes a postcard from Jack Doyle of Montgomery, Ala. Sez Jack: "At the per ounce rate a gal's bathing suit sells at, it is estimated that a man's OVERCOAT should cost $947.52." . . . . We all agree that the world is in a state of ferment. Trouble is, NO one can tell whether the result will be CHAMPAGNE or VINEGAR. . . . . "A BACHELOR," sez a much-married friend of ours, "is a fellow who has the time of your wife at a party." . . . . Many a mother-in-law is a puzzle full of cross words. . . . . WIDOW: a woman who no longer finds fault with her husband. . . . . SNICKERSNORT-OF-THE-MONTH: A telephone operator in our town tells us she answered an agitated signal from a pay station, and heard a tearful feminine voice: "Operator, can I have my dime back? Oscar WON'T speak to me!" . . . . FLIP QUIP: Life for some begins at 40, while others by that time have gone LARGELY to WAIST. . . . .

Your pun-peddler—DUFFY

Q QUESTIONS AND A ANSWERS

Farm Service Provides 115 and 230 Volts

►**Question:** *I purchased a stock tank de-icer rated at 115 volts. My electrician tells me I have only 230 volts so should not use the unit because it will burn out. The manufacturer says I should have 115 volts as well. Can you tell me what is usual for voltages on farms?* B.I., Missouri

►**Answer:** All power line service on farms today provides either 115 volts or a combination of 115 and 230 volts. We feel sure you have the latter. It is possible your electrician found wiring consisting of two hot wires and no neutral wire at your stock tank, which would provide only 230 volts. However, such wiring is not recommended and the addition of a neutral would also provide the 115-volt circuit.

"Well dear, we came out ten to one —you said we'd save $10 a year in electricity by not having a light on the steps; the hospital bill is $100."

Waterlogged Systems

►**Question:** *Our pump becomes waterlogged quite often. Is it possible to prevent occurrence of this by closing all faucets while the pump is operating in order to build up pressure?* Mrs. T.K.—Ohio

►**Answer:** Water systems become waterlogged because of a lack of air in the system. Pressure tanks depend upon compressed air for pressure since water cannot be compressed.

Waterlogging is caused by either an air leak in the pressure tank or improper operation of the air charging device on the pump. To correct, first check for air leaks in the tank, especially around the upper portion. Make this test by placing soap suds around the top plug and welded seams. Any bubbling will indicate presence of air leaks.

Next, see if the air snifter valve on the pump is taking in air between minimum operating pressure of the pump—20 pounds—and 8 pounds above minimum, or 28 pounds by holding your finger over it. Replace the valve core if no air is being taken in. Be sure to use a pump valve core, not one for automobile tires. The automobile tire valve will fit but has too strong a spring.

Another cause may be the air volume control float in the pressure tank. If the float ball is waterlogged or stuck in a downward position, it should be replaced.

New Publication

"The Practical Dictionary of Electricity and Electronics," published by the American Technical Society, 848 East 58th Street, Chicago 37, Illinois. 216 pages, $5.95.

As a "dictionary" of technical material, this book is designed for the practicing engineer who works with electricity or electronics for a living. It is a practical guide, with definitions of

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MODEL H

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•

PUMP FROM DEPTHS TO 600 FEET

Farmers and ranchers who need a *big water supply* to operate profitably will find the Red Jacket Model H "Submerga" the pump that will meet their needs. It will assure plenty of water and pressure on all parts of the farm. It's a big capacity submergible pump that operates under water in a 6-inch well to give long dependable service with a minimum of maintenance.

For complete information about the Model H and all Red Jacket Pumps, including "Submerga" pumps for 4-inch wells and jet pumps, see your local water systems dealer or well driller.

RED JACKET water service products

RED JACKET MANUFACTURING COMPANY
Davenport, Iowa

WS-109

fundamental and complex concepts, equipment and procedures in these fields. Where words will not sufficiently describe a definition, pictures and drawings are used to great advantage. Tables, charts and a handy, 38-page handbook of electricity and electronics in the rear of the book make it a useful source of information for day to day engineering reference purposes. □ □

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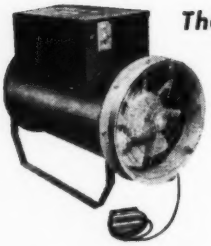

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POINTS WORTH NOTING

See where you're going: A few properly installed outdoor floodlights are an asset to any farm. Make a list of unlighted areas where lights should be installed. These might include chore paths, driveways, yard and building entrances, steps and walkways, machinery repair and service areas, recreation areas, outdoor feeding and watering areas, unloading areas for feed and supplies and isolated buildings and yards.

Then list these areas in the order of greatest need and light each as funds and time are available. Where practical, yard lights should be 15-20 feet above the ground. Select a fixture or lamp that will direct the light downward to area of intended use.

Clean refrigeration unit coils: Your bulk milk cooler, egg cooler, freezer, or household refrigerator can't do its job as it should if condenser coils or fins are clogged with dust and dirt. This radiator-like part of the refrigeration system depends upon good air circulation to function properly.

The coils or fins should be cleaned periodically with a compressed-air hose and brush. Straighten any fins that may become bent during the cleaning. Clean egg coolers and bulk milk coolers about once a month. Twice a year should be often enough for home freezers and refrigerators.

Eliminate musty odors: Musty odors and mold in your refrigerated egg cooling room? First clean out the mold. Then hang up an inexpensive ozone lamp. A 4-watt bulb will do for small egg rooms (about 8 by 15 feet). Keep the unit in operation continuously and it will eliminate stale air and mold growth.

ADVERTISERS in this issue . . .

Whenever you need further information about electrical equipment and appliances, you can depend upon the Manufacturers who are advertising in this magazine. We have indexed here for your convenience in alphabetical order the Manufacturers whose advertising is appearing in this March issue.

When writing to these Manufacturers be sure to mention you saw their advertising in ELECTRICITY ON THE FARM Magazine.

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If you are unable to get information about the particular equipment you require from our advertisers as listed above, our Reader Service Department will be glad to help you. As a reader of this magazine you are entitled to this information service free of cost.

Jamesway. PUSH-BUTTON POWER CHORING.

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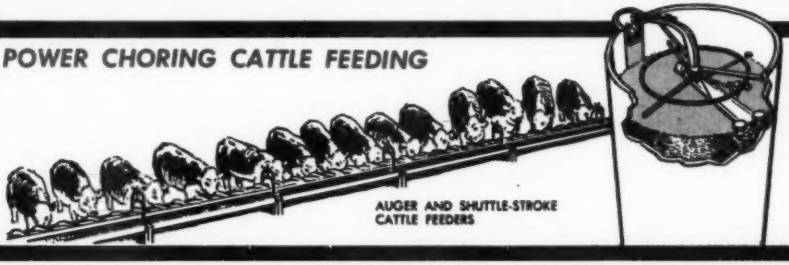

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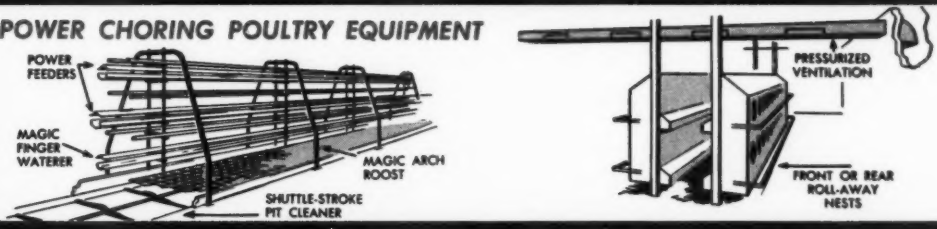

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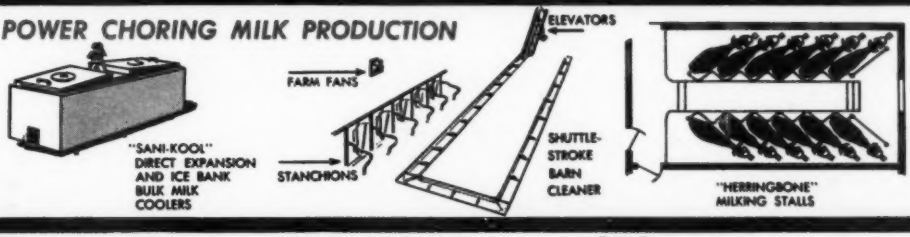
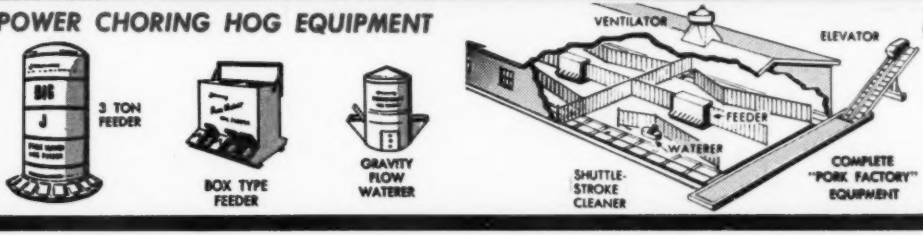


POWER CHORING HOG EQUIPMENT



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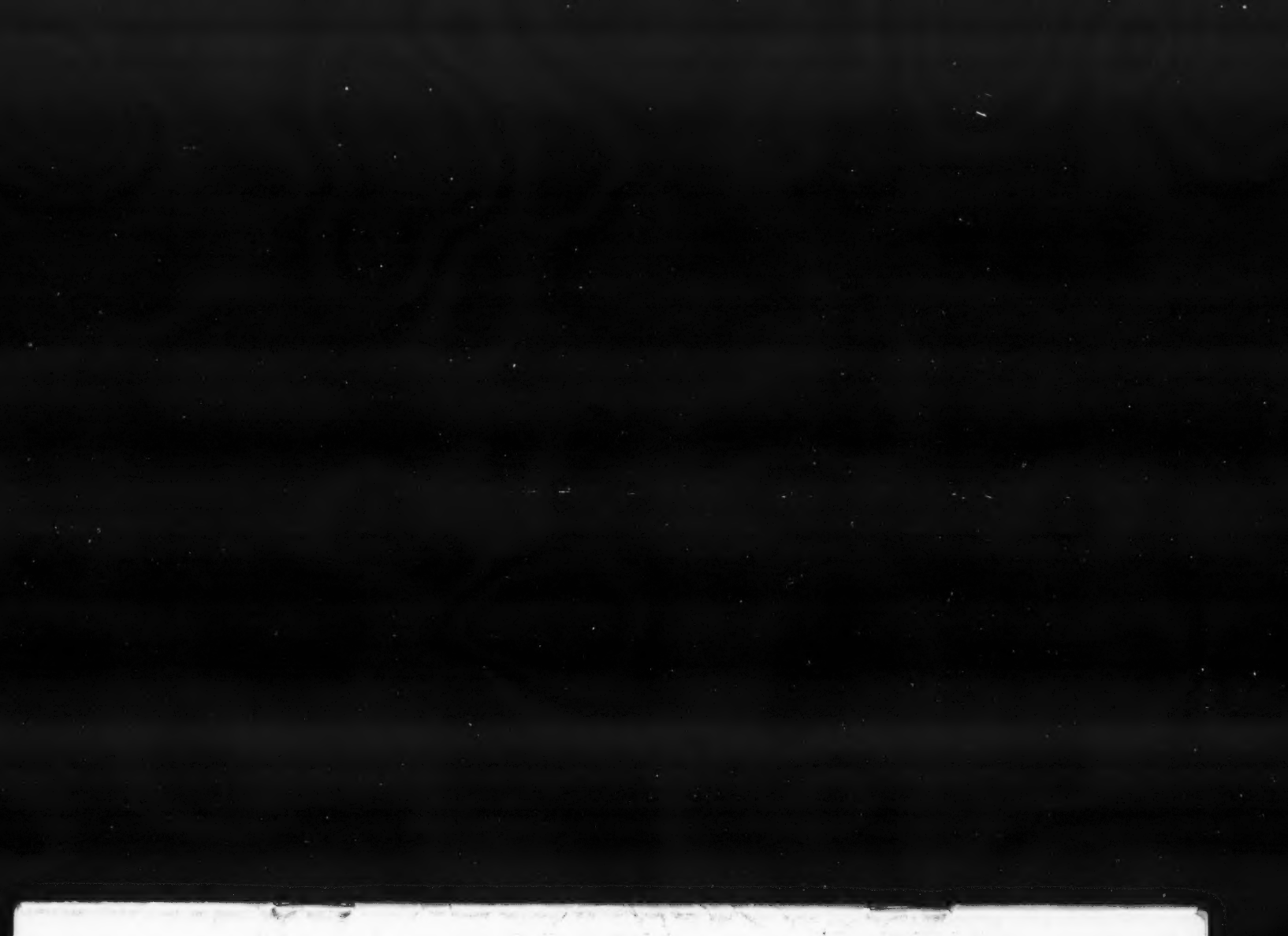
We send you this magazine with the hope that it will show you new ways to enjoy the profits and pleasures of dependable, low-cost electricity.